

INTERNATIONAL SEARCH REPORT

IB2004/003352

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 A61K38/17

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A61K C12N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, BIOSIS, EMBASE, Sequence Search

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>TEGETHOFF S ET AL: "Tetrameric oligomerization of IkappaB kinase gamma (IKKgamma) is obligatory for IKK complex activity and NF-kappaB activation." MOLECULAR AND CELLULAR BIOLOGY, vol. 23, no. 6, March 2003 (2003-03), pages 2029-2041, XP002314348 . ISSN: 0270-7306 abstract, results; discussion;</p> <p style="text-align: center;">----- -/--</p>	1-8

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *G* document member of the same patent family

Date of the actual completion of the international search

20 January 2005

Date of mailing of the international search report

14/02/2005

Name and mailing address of the ISA

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	LE PAGE C ET AL: "Disruption of NF-kappaB signaling and chemokine gene activation by retroviral mediated expression of IKKgamma/NEMO mutants" VIROLOGY, vol. 286, no. 2, 1 August 2001 (2001-08-01), pages 422-433, XP002314349 ISSN: 0042-6822 abstract; results; discussion; -----	1-8
X	WO 99/47672 A (WALLACH DAVID ; YEDA RES & DEV (IL); KOVALENKO ANDREI (IL); EINSTEIN C) 23 September 1999 (1999-09-23)	1-8
Y	page 10, line 3 - page 23, line 5; page 49, line 22 - page 50, line 6; claims; figures 3, 11, 12; example 10; -----	9-32
X	WO 02/092761 A (FANSLOW WILLIAM C III ; IMMUNEX CORP (US); DERRY JONATHAN M J (US); DO) 21 November 2002 (2002-11-21) claims -----	1-8
X	WO 01/83554 A (PRAECIS PHARM INC ; MAY MICHAEL J (US); UNIV YALE (US); FINDEIS MARK A) 8 November 2001 (2001-11-08)	1-8, 33-37
Y	page 4, paragraph 3; page 15, paragraph 2 - page 16, paragraph 4; page 23, paragraph 3; claims; figures 2, 5; example 1; -----	9-32, 38-45
X	MAY M J ET AL: "Selective inhibition of NF-kB activation by a peptide that blocks the interaction of NEMO with the Ikb kinase complex" SCIENCE, vol. 289, 1 September 2000 (2000-09-01), pages 1550-1554, XP002189523 ISSN: 0036-8075 -----	1-8, 33-37
Y		9-32, 38-45
P,X	AGOU F ET AL: "The trimerization domain of nemo is composed of the interacting C-terminal CC2 and LZ coiled-coil subdomains" JOURNAL OF BIOLOGICAL CHEMISTRY, vol. 279, no. 27, 2 July 2004 (2004-07-02), pages 27861-27869, XP002314350 ISSN: 0021-9258 the whole document -----	1-45

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P,X	<p>IHA H ET AL: "Segregation of NF-kappaB activation through NEMO/IKKgamma by Tax and TNFalpha: Implications for stimulus-specific interruption of oncogenic signaling." ONCOGENE, vol. 22, no. 55, 4 December 2003 (2003-12-04), pages 8912-8923, XP002314351 ISSN: 0950-9232 abstract; page 8916, left-hand column, paragraph 3 - page 8919, right-hand column, paragraph 1; discussion, in particular page 8921, left-hand column, last paragraph; figures 4-7;</p>	1-45
T	<p>AGOU F ET AL: "Inhibition of NF-kB activation by peptides targeting NF-kB essential modulator (NEMO) oligomerization" JOURNAL OF BIOLOGICAL CHEMISTRY, vol. 279, no. 52, 24 December 2004 (2004-12-24), pages 54248-54257, XP002314352 ISSN: 0021-9258</p>	1-45

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Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☒ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-32 (all partially)

a purified polynucleotide which encodes a polypeptide that inhibits the NFkappaB signaling pathway, said polypeptide comprising an amino acid sequence selected from SEQ ID Nos. 2, 3, 13 or 14, i.e. comprising the CC2 domain of NEMO, as well as subject-matter related thereto;

2. claims: 1-32 (all partially)

a purified polynucleotide which encodes a polypeptide that inhibits the NFkappaB signaling pathway, said polypeptide comprising an amino acid sequence selected from SEQ ID Nos. 6, 7, 15 or 16, i.e. comprising the LZ domain of NEMO, as well as subject-matter related thereto;

3. claims: 1-32 (all partially)

a purified polynucleotide which encodes a polypeptide that inhibits the NFkappaB signaling pathway, said polypeptide comprising an amino acid sequence selected from SEQ ID Nos. 30-39, i.e. comprising the mutated NEMO-like motif (NLM) domain of NEMO, as well as subject-matter related thereto;

4. claims: 33-45

a method of identifying polypeptides that modulate oligomerization of NEMO comprising a) identifying a candidate polypeptide sequence, b) linking said candidate polypeptide sequence to a polypeptide having a high transduction potential via a spacer sequence, c) contacting a cell culture with the polypeptide fusion construct, d) monitoring the activity of the NFkappaB signaling pathway, e) determining the relative inhibition by said polypeptide fusion construct and f) correlating relative inhibition by said polypeptide fusion construct to NEMO oligomerization as well as subject-matter related thereto;

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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 9947672	A	23-09-1999	AU 760900 B2	22-05-2003
			AU 2954599 A	11-10-1999
			BG 104769 A	30-04-2001
			BR 9909659 A	21-11-2000
			CA 2323637 A1	23-09-1999
			CN 1295614 T	16-05-2001
			EA 4062 B1	25-12-2003
			EE 200000538 A	15-04-2002
			EP 1454985 A2	08-09-2004
			EP 1062336 A1	27-12-2000
			HU 0101612 A2	28-01-2004
			WO 9947672 A1	23-09-1999
			JP 2002506644 T	05-03-2002
			NO 20004649 A	30-10-2000
			NZ 506776 A	29-08-2003
			NZ 525566 A	24-12-2004
			PL 343262 A1	30-07-2001
			SK 13762000 A3	12-03-2001
			US 6734174 B1	11-05-2004
			US 2004219615 A1	04-11-2004
			ZA 200004756 A	11-01-2001
WO 02092761	A	21-11-2002	US 2003165985 A1	04-09-2003
			WO 02092761 A2	21-11-2002
WO 0183554	A	08-11-2001	AT 279438 T	15-10-2004
			AU 5763101 A	12-11-2001
			AU 6116401 A	12-11-2001
			CA 2414290 A1	08-11-2001
			CA 2414296 A1	08-11-2001
			DE 60106423 D1	18-11-2004
			EP 1282643 A2	12-02-2003
			EP 1280820 A2	05-02-2003
			JP 2003531636 T	28-10-2003
			JP 2003531918 T	28-10-2003
			WO 0183554 A2	08-11-2001
			WO 0183547 A2	08-11-2001
			US 2002156000 A1	24-10-2002
			US 2003054999 A1	20-03-2003